Figure 1

Y.:)

.4.

$$Br \longrightarrow N_2 + BF_4$$

$$1$$

$$F \longrightarrow N_2 + BF_4$$

$$3$$

$$O_2N \longrightarrow N_2 + BF_4$$

$$4$$

$$N_2 + BF_4$$

$$6$$

$$N_2 + BF_4$$

$$N_3 + B_4$$

$$N_4 + B_4$$

$$N_5 + B_4$$

$$N_5 + B_4$$

$$N_7 + B_8$$

$$N_8 + B_8$$

-

a) TosCl, $\rm H_2O$, THF b) 4-nitrophenol, DMF, $\rm K_2CO_3$ c) $\rm H_2$, Pd/C d) NOBF₄, CH₃CN



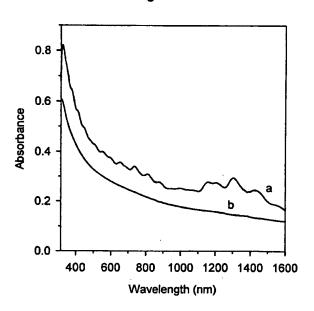


Figure 4

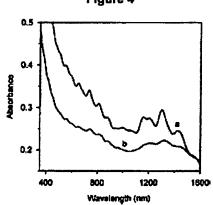
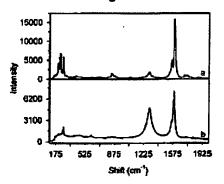
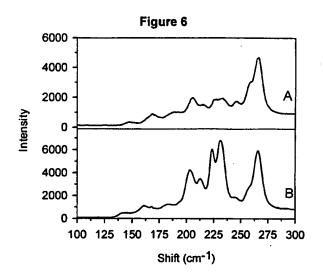


Figure 5



3 of 12



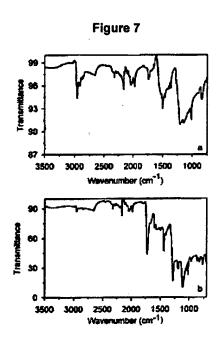
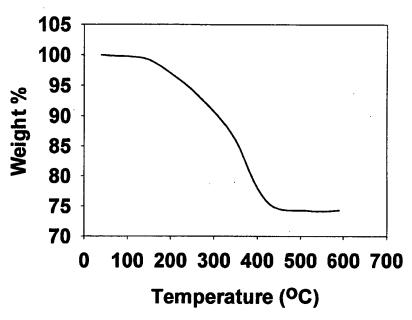


Figure 8



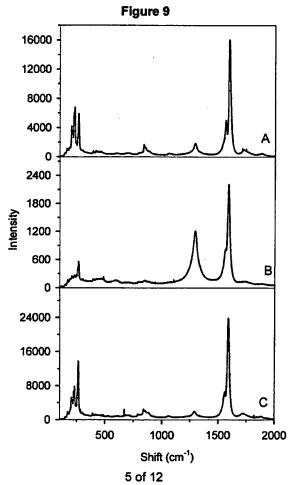


Figure 10

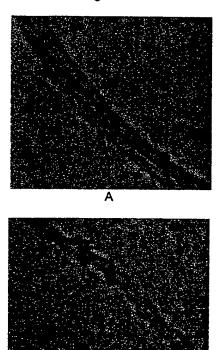


Figure 11

В

Figure 12

 $\pi_{i} \in \mathcal{A}$

Figure 13

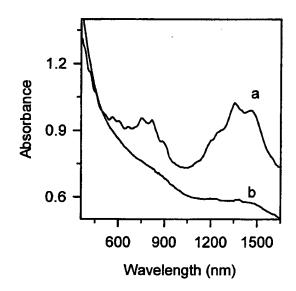


Figure 14

. ; .

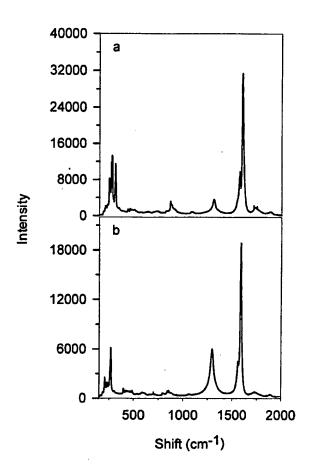


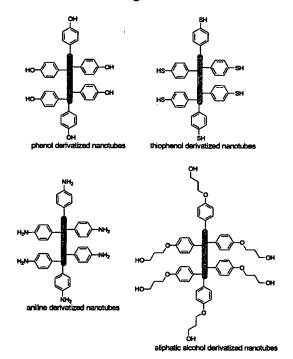
Figure 15

Figure 16

$$R = H_{2}C - C - C + H_{2}CH - CH_{2}CH -$$

cured epoxy (thermoset) resin

Figure 17



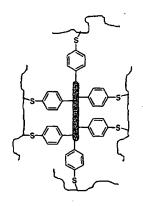
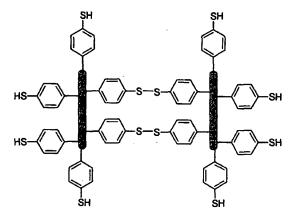


Figure 19



1.13

trifluoroacetic acid
1,2-dichlorbenzene or dimethylformamide
or
heating at or near 175 °C

. . !

Cured thermoset resin in which the derivatized nanotubes act as a crosslinking agent by chemical reaction with the polymer matrix

ī

Figure 23

$$NH_2$$
 base NH_2